

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:  
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PCT

WRITTEN OPINION

(PCT Rule 66)

Applicant's or agent's file reference 100/01189		Date of Mailing (day/month/year) <b>16 AUG 2000</b>
International application No. PCT/IL99/00525		REPLY DUE within 2 months/days from the above date of mailing
International filing date (day/month/year) 04 OCTOBER 1999 (04.10.1999)	Priority date (day/month/year) 02 OCTOBER 1998 (02.10.1998)	
International Patent Classification (IPC) or both national classification and IPC IPC(7): H04L 9/00 and US Cl.: 705/65		
Applicant COMSENSE TECHNOLOGIES LTD.		

- This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.
- This opinion contains indications relating to the following items:
  - ☒ Basis of the opinion
  - ☐ Priority
  - ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - ☐ Lack of unity of invention
  - ☒ Reasoned statement under Rule 66.2 (a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - ☐ Certain documents cited
  - ☐ Certain defects in the international application
  - ☒ Certain observations on the international application

- The applicant is hereby **invited to reply** to this opinion.

**When?** See the time limit indicated above. ~~The applicant may, before the expiration of that time limit, request this Authority to grant an extension. See rule 66.2(d).~~

**How?** By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

**Also** For an additional opportunity to submit amendments, see Rule 66.4.  
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 *bis*.  
For an informal communication with the examiner, see Rule 66.6

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

- The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 02 February 2001 (02.02.2001)

Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer Gail O. Hayes Telephone No. 703 306-5539 <i>Rugenia Zogan</i>
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## WRITTEN OPINION

International application No.

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## I. Basis of the opinion

## 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☒ the description:  
 pages 1-53, as originally filed  
 pages NONE, filed with the demand  
 pages NONE, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
 pages 54-67, as originally filed  
 pages NONE, as amended (together with any statement) under Article 19  
 pages NONE, filed with the demand  
 pages NONE, filed with the letter of \_\_\_\_\_
- ☒ the drawings:  
 pages 1-5, as originally filed  
 pages NONE, filed with the demand  
 pages NONE, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages NONE, as originally filed  
 pages NONE, filed with the demand  
 pages NONE, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos. NONE
- ☐ the drawings, sheets/fig NONE

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(e)).

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."

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PCT/IL99/00525**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)	Claims <u>1-29,31-44,46,53-67,70,72-75,77-79,81,83-87,89-138</u>	YES
	Claims <u>30,45,47-52,68-69,71,76,80,82 and 88</u>	NO
Inventive Step (IS)	Claims <u>38-44,65-67,97-138</u>	YES
	Claims <u>1-37,45-64,68-96</u>	NO
Industrial Applicability (IA)	Claims <u>1-138</u>	YES
	Claims <u>NONE</u>	NO

**2. CITATIONS AND EXPLANATIONS**

Please See Continuation Sheet

----- NEW CITATIONS -----  
NONE

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**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claims 11-25, 28, 36-27, 43-44, 48-49, 58, 60, 64, 70, 74-75, 79, 92, 94-96, 109, 119-122, 127-129, and 138 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because the claims are indefinite for the following reason(s): improper multiple dependency.

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(To be used when the space in any of the preceding boxes is not sufficient)

**TIME LIMIT:**

The time limit set for response to a Written Opinion may not be extended. 37 CFR 1.484(d). Any response received after the expiration of the time limit set in the Written Opinion will not be considered in preparing the International Preliminary Examination Report.

**V. 2. Citations and Explanations:**

Claims 1-29 lack an inventive step under PCT Article 33(3) as being obvious over Allen et al. (hereinafter, "Allen") (U.S. 5,815,020).

As per claim 1, Allen discloses a smart card comprising a memory for storing information; at least one transmitting or receiving antenna; and a low frequency circuit, for handling information associated with said antenna and said memory (fig. 2 and associated text). Allen does not explicitly disclose that the information is modulated at a modulation frequency of between 5 kHz and 100 kHz; however, this is just an obvious design variation.

As per claims 2-7, 23, and 26-27, the limitations recited are obvious antenna design variations.

As per claim 8, Allen discloses a processor for processing information (fig. 2 and associated text).

As per claim 9, Allen discloses that the processor generates a response to an interrogation of the smart card (fig. 2 and associated text).

As per claim 10-11, Allen discloses that the memory comprises a long-term memory and a temporary memory (fig. 2 and associated text).

As per claims 12-22 and 25, the limitations recited are obvious modulation frequency variations.

As per claim 28, Allen discloses that the smart card implements a two-way communication protocol (fig. 1 and associated text).

As per claim 29, the limitation of an error correction protocol would have been obvious to increase the throughput of the system.

Claims 30 and 68-69 lack novelty under PCT Article 33(2) as being anticipated by Allen et al. (U.S. 5,815,020).

As per claim 30, Allen discloses a method of interfacing a smart-card and an electronic device, comprising: providing a smart card; providing an electronic device including at least one standard component, which component is not designed for digital communication; and driving said standard component to transmit or receive a digitally encoded signal between said electronic device and said smart card (fig. 2 and associated text).

As per claim 68, Allen discloses a method of powering a smart card, comprising: transmitting ultrasonic waves to a smart card; receiving said waves by the smart card; converting said waves by said smart card into energy; and utilizing said energy by said smart card, for powering processing of data (fig. 2 and associated text).

As per claim 69, Allen discloses that the waves encode said data (fig. 2 and associated text).

Claims 31-37 and 70 lack an inventive step under PCT Article 33(3) as being obvious over Allen et al. (hereinafter, "Allen") (U.S. 5,815,020).

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As per claim 31, the limitation of the standard component comprising a speaker is an obvious design variation.

As per claims 32-33, the limitation of the signal comprising a low frequency RF signal or a low frequency ultrasonic signal are obvious design variations.

As per claim 34, Allen discloses the electronic device comprises a computer (fig. 1 and associated text).

As per claim 35, the limitation of the computer forwarding the signal to a computer peripheral coupled to the computer would have been obvious in order to interface with the peripheral.

As per claims 36-37, the limitation of either a two-way digital or a one-way link between the smart card and the computer is an obvious design variation.

As per claim 70, Allen does not explicitly disclose that the transmitting comprises transmitting from a computer speaker. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to do the above because it would have been an obvious design choice.

Claims 45 and 47-51 lack novelty under PCT Article 33(2) as being anticipated by Takahashi (U.S. 4,961,229).

As per claim 45, Takahashi discloses a smart card comprising: a memory; a text-to speech converter, for converting text from said memory into speech sounds; and an external communication link for communicating information to or from said memory (columns 1-2).

As per claim 47, Takahashi discloses a smart card wherein said communication link comprises an acoustic communication link and wherein said speech sounds are outputted using said acoustic link (columns 1-2).

As per claim 48, Takahashi discloses a smart card comprising circuitry for receiving indications over said link and converting said indications into text (columns 1-2).

As per claim 49 Takahashi discloses a smart card comprising a speech recognition circuit, for entering information into said smart card (columns 1-2).

As per claim 50, Takahashi discloses a smart card comprising: a memory; a speech input circuit, for entering information into said memory; and an external communication link for communicating information to or from said memory (columns 1-2).

As per claim 51, Takahashi discloses a smart card wherein said communication link comprises an acoustic communication link and wherein said speech sounds are inputted using said acoustic link (columns 1-2).

Claim 46 lacks an inventive step under PCT Article 33(3) as being obvious over Takahashi (U.S. 4,961,229).

As per claim 46, the EMV form standards are well known standards and thus would be obvious to configure the device to meet them.

Claim 52 lacks novelty under PCT Article 33(2) as being anticipated by Gullman et al. (U.S. 5,280,527).

As per claim 52, Gullman discloses a smart card comprising: a memory; an external communication link for communicating information to or from said memory; and a biometric data acquisition circuit, for acquiring biometric data, wherein said circuit shares an input transducer with said communication link (fig. 2 and associated text).

Claims 53-64 lack an inventive step under PCT Article 33(3) as being obvious over Gullman et al. (U.S. 5,280,527).

As per claim 53, an acoustic communication link is an obvious design variation.

As per claims 54-55, each of the biometric data acquisition circuit comprising either a voice input circuit or motion determination circuit are obvious design variations.

As per claims 56-57, each of the biometric data comprising either motion of the smart card in the form of a gesture or in the form of handwriting as obvious design variations.

As per claim 58, Gullman discloses a processor for evaluating the biometric data against a sample of biometric data (fig. 2 and

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associated text).

As per claim 59, Gullman discloses the biometric data is stored in the memory (fig. 2 and associated text).

As per claim 60, Gullman discloses the acquired biometric data is stored in the memory (fig. 2 and associated text).

As per claim 61, Gullman does not explicitly disclose the steps of moving a smart card by a person, detecting said motion using at least a circuit on said card, and analyzing said motion to obtain a biometric signature of said person. However, it would have been obvious to one of ordinary skill in the art to modify Gullman to do the above to authenticate the holder of the card.

As per claim 62, Gullman does not disclose detecting said motion using an inertial motion detector in said card. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Gullman to do the above to authenticate the holder of the card.

As per claim 63, Gullman does not disclose detecting said motion using an acoustic distance measurement, which measurement uses an acoustic transponder of said card. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Gullman to do the above to authenticate the holder of the card.

As per claim 64, Gullman does not disclose that the motion comprises a writing motion. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Gullman to do the above to authenticate the holder of the card.

Claims 71, 80, and 82 lack novelty under PCT Article 33(2) as being anticipated by Anegawa (U.S. 4,978,840).

As per claim 71, Anegawa discloses a method of powering a smart card, comprising: transmitting light waves to a smart card; receiving said waves by the smart card; converting said waves by said smart card into energy; and utilizing said energy by said smart card, for powering the processing of data, wherein said waves encode said data (fig. 5 and associated text).

As per claim 80, Anegawa discloses a method of charging a smart card, comprising: receiving by said smart card of ambient RF radiation; converting said received radiation into stored energy; and storing said energy by said smart card for later powering the operation of said smart card (fig. 5 and associated text).

As per claim 82, Anegawa discloses a smart card comprising an inertial power source, a memory, and an external communication link powered by said inertial source to transmit or receive information for said memory (fig. 5 and associated text).

Claims 72-75, 81, and 83-87 lack an inventive step under PCT Article 33(3) as being obvious over Anegawa (U.S. 4,978,840).

As per claims 72-73, the choose of either an ultrasonic link or an IR link are obvious design variations.

As per claims 74-75, the choose of whether or not the transmitting is timed to synchronize or not to synchronize with the processing are obvious design variations.

As per claim 81, Anegawa does not disclose that the ambient radiation comprises normally emitted radiation from a cellular telephone. However, it would have been obvious to use the radiation from a cellular phone because of the popularity of cell phones.

As per claim 83, Anegawa does not disclose that the internal power source comprises a storage battery which is recharged by said inertial power source. It would have been obvious to one of ordinary skill in the art to use such recharging to extend the utility of the device.

Claims 84 and 86-87 differs from claim 82 by using a different power source. However, such a choose is merely just an obvious design variation.

As per claim 85, the limitation of the storage battery which is recharged by the power source would have been obvious to extend the utility of the device.

Claims 76 and 88 lack novelty under PCT Article 33(2) as being anticipated by Jachimowicz et al. (U.S. 5,763,862).

As per claim 76, Jachimowicz discloses a method of interaction between a card and a computer, comprising: inserting said card into a drive for removable media other than said card of said computer; and transmitting information between said card and said drive (figs. 12 & 13 and associated texts).

As per claim 88, Jachimowicz discloses an optical smart card having an optical data input circuit, a wireless output link, and a

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(To be used when the space in any of the preceding boxes is not sufficient)

memory for storing information from said input and outputting via said output link (figs. 12 & 13 and associated texts).

Claims 77-79 and 89-96 lack an inventive step under PCT Article 33(3) as being obvious over Jachimowicz et al. (U.S. 5,763,862).

As per claims 77-78, both diskette and optical disk drives are obvious design variations.

As per claim 79, transmitting power from the computer to the smart card using a said drive would have been obvious to power the card.

As per claims 89-91, the recited optical input whether it be a scalar, one-dimensional, or two-dimensional are all obvious design variations.

As per claim 92, the limitation of an optical power input circuit which converts ambient light into stored energy would have been obvious to power the device.

As per claim 93, the limitation of the optical power input and the optical data input sharing a common optical sensor would have been obvious to reduce the complexity of the device.

As per claims 94-96, the recited acoustic, IR, and RF links are all obvious design variations.

Claims 38-44 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a acoustic smart card with the limitations recited in claim 38.

Claims 65-67 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a smart card with the limitations recited in claim 65.

Claims 97-138 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a smart card with the limitations recited in claims 97, 105, 114, 124, and 130.